Remarks

The December 2, 2003 Official Action has been carefully reviewed. In view of the amendments submitted herewith and the following remarks, favorable reconsideration and allowance of this application are respectfully requested.

At the outset it is noted that a shortened statutory response period of three (3) months was set forth in the December 2, 2003 Official Action. Therefore, the initial due date for response was March 2, 2004. A petition for a one month extension of the response period is presented with this response, which is being filed within the one month extension period.

In response to the Examiner's request for a formal drawing of Figure 1, a formal drawing of Figure 1 is submitted herewith.

The Examiner also notes that in order for references to appear on the face of any patent issuing from the instant application, a PTO-1449 must be submitted. In accordance with the provisions of 37 C.F.R. §1.56, Applicants hereby submit the attached PTO Form-1449, listing references which the Examiner is requested to consider and make of record in the above-identified application. This submission is believed to be in full compliance with the requirements of 37 C.F.R. §1.98. Copies of the references have not been provided as copies of the references were submitted in the parent 09/046,373 application. In the opinion of the undersigned, the listed references are the most pertinent of which the undersigned is aware. However, no representation is made or intended that more pertinent references do not exist.

Applicants submit that the references listed on PTO FOrm-1449 are the same as those submitted in the 09/046,373 application, now U.S. Patent 6,235,714. Inasmuch as the instant application is a divisional of the 09/046,373 application, the references submitted in the 09/046,373 application have already been considered by the Examiner in

the instant application as required by the MPEP §201.06(d). Accordingly, Applicants submit that the entry of the foregoing references does not constitute new matter, but rather satisfies a formality so that the references will appear on the face of any patent issuing from the instant application.

At page 2 of the Official Action, the Examiner has rejected claim 6 under 35 U.S.C. §112, second paragraph for alleged indefiniteness.

It is also the Examiner's position that claims 6, 8, 12, and 13 fail to satisfy the written description and enablement requirement under 35 U.S.C. §112, first paragraph.

Finally, claims 6 and 8 stand rejected under 35 U.S.C. §103(a) as allegedly obvious over Lerner et al. (Science (1991) 252:659-667).

Applicants note that the 35 U.S.C. §103(a) rejection of claim 12 over Blackburn et al. or U.S. Patent 5,948,658 has not been maintained in the present Official Action. Accordingly, Applicants presume this rejection has been withdrawn. Confirmation of this presumption is respectfully requested.

The foregoing rejections constitute all of the grounds set forth in the December 2, 2003 Official Action for refusing the present application.

No new matter has been introduced into this application by reason of any of the amendments presented herewith. Moreover, none of the present claim amendments is believed to constitute a surrender of any originally claimed subject matter, or a narrowing of the claims in order to establish patentability. The effect of these amendments is merely to make explicit that which was implicit in the claims as originally worded.

CLAIM 6, AS AMENDED, SATISFIES THE REQUIREMENTS OF 35 U.S.C. §112, SECOND PARAGRAPH

The Examiner has rejected claim 6 under 35 U.S.C. §112, second paragraph as allegedly indefinite.

Specifically, the Examiner has maintained the position that the term "covalently reactive antigen analog" is indefinite. Applicants continue to disagree with the Examiner for the reasons set forth in the response submitted August 19, 2003. However, in an effort to expedite issuance of the instant application, Applicants have employed the Examiner's suggestion and amended claim 6 to recite the definition of the phrase "covalently reactive antigen analog" provided at page 16, lines 16-20 of the instant application.

Accordingly, Applicants respectfully request the rejection of claim 6 under 35 U.S.C. §112, second paragraph be withdrawn.

CLAIMS 6, 8, 12, AND 13 SATISFY THE ENABLEMENT AND WRITTEN DESCRIPTION REQUIREMENTS UNDER 35 U.S.C. §112, FIRST PARAGRAPH

The Examiner has rejected claims 6, 8, 12, and 13 for allegedly failing to satisfy the written description and enablement requirements under 35 U.S.C. §112, first paragraph. Specifically, the Examiner asserts that the specification provides inadequate guidance and no working examples. Additionally, the Examiner contends that because the submitted reference, Paul et al. (J. Biol. Chem. (2003) 278:20429-20435), fails to teach a CRAA that was described in the specification, the reference has no probative value. Applicants strenuously disagree with the Examiner's position.

The Examiner notes at page 5 of the Official Action that the specification fails to "teach the CRAA that was used to make catalytic antibodies in Paul et al." Applicants submit, however, that the CRAA employed by Paul et al. clearly meets the definition of a CRAA set forth at page 16, lines 14-20 and

in amended claim 6. Specifically, gp120-CRA **III** contains, an electrophilic center flanked by peptide residues derived from a peptide antigen of a peptide to be targeted for cleavage, i.e. gp120 (page 20430). Indeed, Paul et al. note that the electrophilic phosphonate diester groups are "in spatial proximity with antigenic epitopes presented by the protein" (page 20431).

Furthermore, Applicants submit that the guidance given in the instant specification (see, for example, page 16, line 14 through page 18, line 17) would have allowed the skilled artisan to the generate the gp120-CRA **III** construct of Paul et al. For example, the instant specification teaches targeting viral coat proteins at page 16, lines 21-23; targeting gp120 at, for example, page 14, lines 7-21 and page 17, lines 11-16; and targeting epitopes of gp120 "even if they do not participate directly in HIV-1 binding to host cells" at page 71, lines 24-26. Further, the specification explicitly discloses that a specific embodiment of the present invention is a CRAA which incorporates "an epitope present in HIV gp120" (page 18, lines 10-12). Inasmuch as gp120-CRA **III** is a CRAA comprising an electrophilic group amid an antigenic epitope of gp120 (see, for example, page 20431), the CRAA of Paul et al. was designed in accordance with the directions of the instant specification. Accordingly, Applicants submit that the CRAA of Paul et al. does have "probative value in the determination whether the instant specification is enabling or contains a written description of the invention."

In support of the written description and enablement rejection, the Examiner contends that there is only "general guidance" and no working example in the specification. Applicants respectfully submit a detailed procedure is not explicitly required for enablement. As noted in the MPEP at § 2164,

> The information contained in the disclosure of an application must be sufficient to inform those skilled in the relevant art how to both make and use the claimed invention. Detailed procedures for making and using the invention may not be necessary if the description of the invention itself is sufficient to permit those skilled in the art to make and use the invention.

Notwithstanding the direction of the MPEP, Applicants also respectfully disagree with the Examiner's assessment of the guidance in the specification as being "general." As noted in the response filed August 19, 2003, detailed materials and methods are provided for 1) the preparation and utilization of an CRAA at pages 29-40; 2) the production of anti-gp120 catalytic antibodies by immunization at pages 88-102; and 3) the active and passive immunization of a host at pages 121-123. A close examination of these descriptions reveals the disclosure of exemplary reagents, volumes of reagents, duration of administration, frequency of administration, and the like. Applicants submit such specific recitation of exemplary conditions can not be considered "general."

With regard to the Examiner's assertion that there is no working example, Applicants submit that the successful elicitation of catalytic antibodies by immunization with the CRAA gp120-CRA **III** by Paul et al. serves as a working example which demonstrates the instant specification is fully enabling. The methods employed by Paul et al. to generate catalytic antibodies by immunization with gp120-CRA **III** is set forth at page 20431. Specifically, MRL/lpr mice were immunized with a CRAA, designed to elicit catalytic antibodies against gp120, by intraperitoneal injection of 11µg of the CRAA in Ribi adjuvant. The injections were given in 3 administrations over 4 weeks and a booster shot given by intravenous injection. Additionally, blood was obtained from the retroorbital plexus throughout the immunization schedule and splenocytes were used to create hybridomas and monoclonal

cell lines producing the desired catalytic antibodies.

Similarly, the instant specification, at pages 88-89, teaches the immunization of MRL/lpr mice with a CRAA designed to elicit catalytic antibodies to gp120. The specification teaches administering about 100 μg of the CRAA in Ribi adjuvant in three intraperitoneal injections followed by one intravenous injection. Lastly, antibodies can be obtained from retroorbital plexus bleeds taken throughout the course of the immunization process or from the harvested splenocytes. Thus, the specification clearly provides adequate written description and enablement for a skilled artisan to "make and use" the instantly claimed invention.

Finally, it is a well-settled premise in patent law that experimentation to obtain the subject matter encompassed by the claims is permissible, so long that such experimentation is not undue. Given the detailed disclosure in the specification as described, it cannot be reasonably maintained that undue experimentation is required to practice this invention.

In light of the foregoing remarks, Applicants respectfully request the withdrawal of the rejection of claims 6, 8, 12, and 13 under 35 U.S.C. §112, first paragraph.

CLAIMS 6 AND 8, AS AMENDED, ARE NOT RENDERED OBVIOUS BY THE PRIOR ART CITED BY THE EXAMINER

The Examiner has rejected claims 6 and 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over Lerner et al. Specifically, the Examiner maintains that because the meaning of "covalently reactive antigen analog" is unclear, the instantly claimed invention is obvious over Lerner et al. Further, the Examiner indicates that upon defining the phrase "covalently reactive antigen analog" in claim 6 would lead to the withdrawal of the rejection under 35 U.S.C. §103(a).

As noted hereinabove, Applicants have amended claim 6 to explicitly define the phrase "covalently reactive antigen

analog" as containing an electrophilic center flanked by peptide residues derived from proteins associated with a particular peptide antigen to be targeted for cleavage. Inasmuch as Lerner et al. fails to describe the use of antigen analogs containing an electrophilic center as instantly claimed to elicit catalytic antibodies, Lerner et al. can not be reasonably held to render the instant invention obvious.

Accordingly, Applicants respectfully request the rejection of claims 6 and 8 under 35 U.S.C. §103(a) be withdrawn.

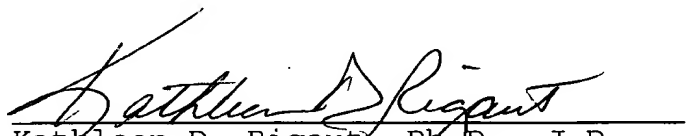
CONCLUSION

In view of the amendments presented herewith, and the foregoing remarks, it is respectfully urged that the rejections set forth in the December 2, 2003 Official Action be withdrawn and that this application be passed to issue.

It is respectfully requested that the foregoing remarks and amendments presented herewith be entered in this application, since it is believed they clearly place the pending claims in condition for allowance. In any event, the claims as presently amended are believed to eliminate certain issues and better define other issues which would be raised on appeal, should an appeal be necessary in this case.

In the event the Examiner is not persuaded as to the allowability of any claim, and it appears that any outstanding issues may be resolved through a telephone interview, the Examiner is requested to telephone the undersigned attorney at the phone number give below.

Respectfully submitted,
DANN, DORFMAN, HERRELL AND SKILLMAN
A Professional Corporation

By 
Kathleen D. Rigaut, Ph.D., J.D.
PTO Registration No. 43,047

Telephone: (215) 563-4100
Facsimile: (215) 563-4044
Enclosures: Figure 1
4 sheets of PTO-1449